



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/589,808

08/17/2006

Tomomichi Hashimoto

5404/169

2218

757 7590 10/09/2008  
BRINKS HOFER GILSON & LIONE  
P.O. BOX 10395  
CHICAGO, IL 60610

EXAMINER

ZIMMER, MARC S

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

10/09/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,808	<b>Applicant(s)</b> HASHIMOTO ET AL.	
	<b>Examiner</b> MARC S. ZIMMER	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/17/06,11/06/06,01/16/07,02/06/08.</u>                      | 6) <input type="checkbox"/> Other: _____                          |



### ***Claim Analysis***

Applicant claims a polyorganosiloxane/vinyl polymer graft copolymer in terms of the process by which the product is made. It is presumed that this is done perhaps as a way of implicitly excluding volatile siloxane by-products and/or unreacted volatile siloxane starting materials- the background section of Applicant's Specification and the bridge to the disclosure of their invention explains how similarly-constituted copolymers are documented in the prior art but that they're use as flame retardants is adversely impacted by the presence of said volatile siloxane materials in the copolymer product- but the Examiner believes it should be emphasized that, in his estimation, the manner in which their invention is disclosed does NOT serve to preclude the presence of these nor other compounds. Indeed, the reference need not even teach the aforementioned copolymer as a waterborne emulsion/dispersion because the process by which the copolymer is prepared would not exclude a step wherein the copolymer was isolated from the aqueous medium. Rather, claims 1-4 are merely directed to a graft copolymer featuring contributions from monomers corresponding to a polyorganosiloxane bearing moieties that are polymerizable by free radical polymerization, a monomer corresponding to claimed monomer (E) and, optionally a monomer corresponding to claimed monomer (D), and it is considered that any reference that teaches a copolymer derived from these starting materials in comparable amounts will be held as anticipatory of the instant invention regardless of whether the copolymer the siloxane macromonomer is obtained by polymerizing volatile siloxane compounds.

It is submitted that Applicant might consider stipulating that the copolymer product is substantially devoid of volatile siloxane compounds, or whatever similar language their Specification will support.

There are numerous documents that disclose a similarly constituted copolymer but in the name of brevity, and insofar as the Examiner expects that Applicant will respond with meaningful amendments that would serve to obviate a rejection over at least most of these references, only a couple of these will be identified at this time.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-6 are rejected under as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. In order that the siloxane macromer be capable of copolymerizing with the vinyl monomers, it must possess residues that are copolymerizable with the monomers (D) and (E). However, polyorganosiloxane (A) is said to be formed only by emulsion polymerizing a precursor bearing condensation-reactive groups. There is no mention of a step wherein a residue polymerizable by free radical polymerization is introduced onto the polymer. Therefore, polyorganosiloxane (A), as claimed, would not even appear to be able to form a copolymer with (D) and (E).

For the purpose of evaluating the claimed invention against the prior art, it will be presumed that the preparative approach for making polysiloxane (A) was supposed to have also entailed capping the polymer with a silane bearing hydrolyzable groups and a group polymerizable by free radical polymerization.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6 are rejected under 35 U.S.C. 102(a) and (e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Saegusa et al., WO 2004/096876..

The applied reference has a common inventor/assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

U.S. Patent # 7,393,915 has been treated as a faithful translation of the teachings of the WIPO document into the English language.

Table 2 outlines the materials employed to make a sampling of graft copolymers similar to those being claimed. Significantly, after being prepared, the copolymers are subjected to slurry stripping to rid the copolymers of volatile siloxane compounds. It is appreciated that the method limitations of claims 1 and 3 are not expressly disclosed but, to reiterate, this consideration is of no consequence given that the invention is disclosed using product-by-process language. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior

Art Unit: 1796

product was made by a different process" *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

It is contemplated that these products be mixed with thermoplastics to impart flame retardance and impact resistance (column 9, lines 20-23) though a favored ratio of copolymer to thermoplastic is not advocated. Nevertheless, the claimed amount is consistent with those quantities of an impact modifier or a flame retardant that a skilled artisan would add to a thermoplastic host.

Claims 1-6 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ito et al., JP 2000-17029.

See reference example 1 and 2 where an equivalent macromer is first prepared and subsequently copolymerized with monomers correlating with (D) and (E), and in comparable amounts. Elsewhere (paragraphs [0001] and [0034]), it is indicated that the copolymer is added to thermoplastics as flame retardants in a quantity that encompasses that of the claim.

Claims 1-6 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hashimoto et al., U.S. Patent Application Publication No. 2005/0038149. See claims 1 and 4-7.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140



Art Unit: 1796

F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 6 is rejected on the ground of nonstatutory double patenting over claims 1 and 5 of U. S. Patent No. 7,067,075 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter.

Both claims disclose a composition comprising a thermoplastic component and a polysiloxane graft copolymer wherein the graft copolymer component is prepared from equivalent materials and in comparable amounts.

Claims 1-5 are provisionally rejected on the ground of nonstatutory double patenting over claims 1 and 4-7 of copending Application No. 10/466,130. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that

Art Unit: 1796

copending application since the referenced copending application and the instant application are claiming common subject matter.

The claims differ primarily in that the co-pending claims are actually substantially narrower in their scope. That is to say, the scope of the instant claims is sufficiently broad so as to embrace all permutations of the invention disclosed in co-pending claims 1 and 4-7 of the '130 application. In essence, co-pending claims 1 and 4-7 recite species within the genus that is defined by the instant claims.

Claims 1-4 are provisionally rejected on the ground of nonstatutory double patenting over claims 1, 8, 9, and 14 of copending Application No. 10/551,944. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter.

Ozdeger, U.S. Patent # 6,420,480, Suzuki et al., U.S. Patent # 5,061,481, and Doi et al., U.S. Patent # 5,594,067 are cited as being of interest for their disclosure of similar copolymers dispersed/emulsified in water. However, there is no indication of how the silicone macromer used in the preparation of said copolymer was prepared. In at least one instance, the macromers were purchased from commercial sources. Hence,

Art Unit: 1796

it cannot be ascertained whether or not these copolymers would be free of volatile siloxanes which, again, are not as yet excluded from the claimed invention either.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARC S. ZIMMER whose telephone number is (571)272-1096. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

October 1, 2008

/Marc S. Zimmer/  
Primary Examiner, Art Unit 1796

Application/Control Number: 10/589,808  
Art Unit: 1796

Page 10